

# ***KiPRO*rack**

ProRes Avid DNxHD®

## File-based 1RU Recorder and Player



**AJAJ**  
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AJA's Ki Pro Rack simplifies the transition from traditional tape to file-based workflows. Professional video and audio connections and a straightforward interface ensure it's fast to adopt and easy to integrate into your existing infrastructure.

## File-based 1RU Recorder and Player

**The power of Ki Pro in a 1RU format, the perfect fit for your file-based workflow.**

Ki Pro Rack offers high-quality, 'ready-to-edit' file capture, designed to get material from source to editorial as quickly as possible.

With a wealth of professional connections, Ki Pro Rack will fit right into your existing cabling and routing system. Ki Pro Rack records Apple ProRes and Avid DNxHD files at your choice of quality level direct to removable hard disk or SSD KiStor Storage Modules, eliminating the need for time-consuming logging and capturing.

Like Ki Pro, Ki Pro Rack features AJA's industry leading conversion technology, enabling you to perform broadcast-quality up/down/cross conversion during recording or playback without the need for additional conversion hardware.

Anyone familiar with the operation of a tape deck will feel immediately at home with Ki Pro Rack's tactile controls, while the onscreen menu structure ensures quick setup and a rapid learning curve.

The twin media drive bays on the Ki Pro Rack allow extremely fast media changes - you can switch drives and start recording straight away, without having to swap out the drive modules.

Ki Pro Rack's network connectivity opens up new methods for integrating into your facility. The built-in web UI allows centralized setup or remote operation of all Ki Pro units simultaneously. Configure settings, control playback and manage content using any web browser connected to the network. Mounted KiStor drives can be accessed via the web UI, allowing files to be transferred to and from Ki Pro Rack without having to remove the storage media.



## 10-bit, full raster recording

Big on quality - but not on file size.

Ki Pro Rack records to four quality levels of Apple ProRes or three quality levels of Avid DNxHD. This lets you choose the balance of quality and file size that's right for each individual production as well as having the flexibility to record directly to native file formats that are understood by most major editing systems.

By utilizing efficient ProRes and DNxHD codecs, file sizes are kept in check so you won't need to blow your production budget on extra storage.



## RS-422 Control

RS-422 control allows Ki Pro Rack to integrate easily with supported editing systems and external controllers allowing it to fulfill several of the functions of a traditional VTR. Supported NLEs can even perform assemble edits directly to the Ki Pro Rack.



## Familiar controls and operation

Anyone familiar with the operation of a tape deck will feel immediately comfortable when working with Ki Pro Rack.

Just like a traditional tape deck, Ki Pro Rack features straightforward and dedicated transport buttons - record, play, stop, rewind, fast forward - making the device easy to operate with minimal training time. The current status of the system and key configuration information is clearly displayed on the built-in screen. Additional operational information can be found in the STATUS menu which can be accessed even when recording or playing back.

The Ki Pro Rack operating system offers users a flat menu structure that is easy to navigate with menu parameters presented in clear and understandable language.





## Reliable storage media

Ki Pro Rack captures directly to reliable AJA KiStor modules. KiStor modules are available as HDDs or SSDs in a variety of capacities to best suit the demands of your production environment. KiStor modules also feature either built-in FireWire 800 or USB 3.0 for direct connection to your computer system. Alternately, KiStor modules may also be used with the optional KiStor Dock which features USB3 and Thunderbolt™ connectors for lightning-fast data transfers.

The twin media drive bays on the Ki Pro Rack allow extremely fast media changes - you can switch drives and start recording right away, without having to wait to eject the first drive.

## Ethernet connectivity

Once established on a local network, Ki Pro Rack's parameter settings, clip selection and transport controls can be accessed from any computer and web browser; no additional or special software installation is required on the host computer. Multiple Ki Pro Rack units may even be networked together and controlled from a single interface making them ideal recorders for multi-camera projects or to allow centralized control and configuration within a facility.

## Professional connections

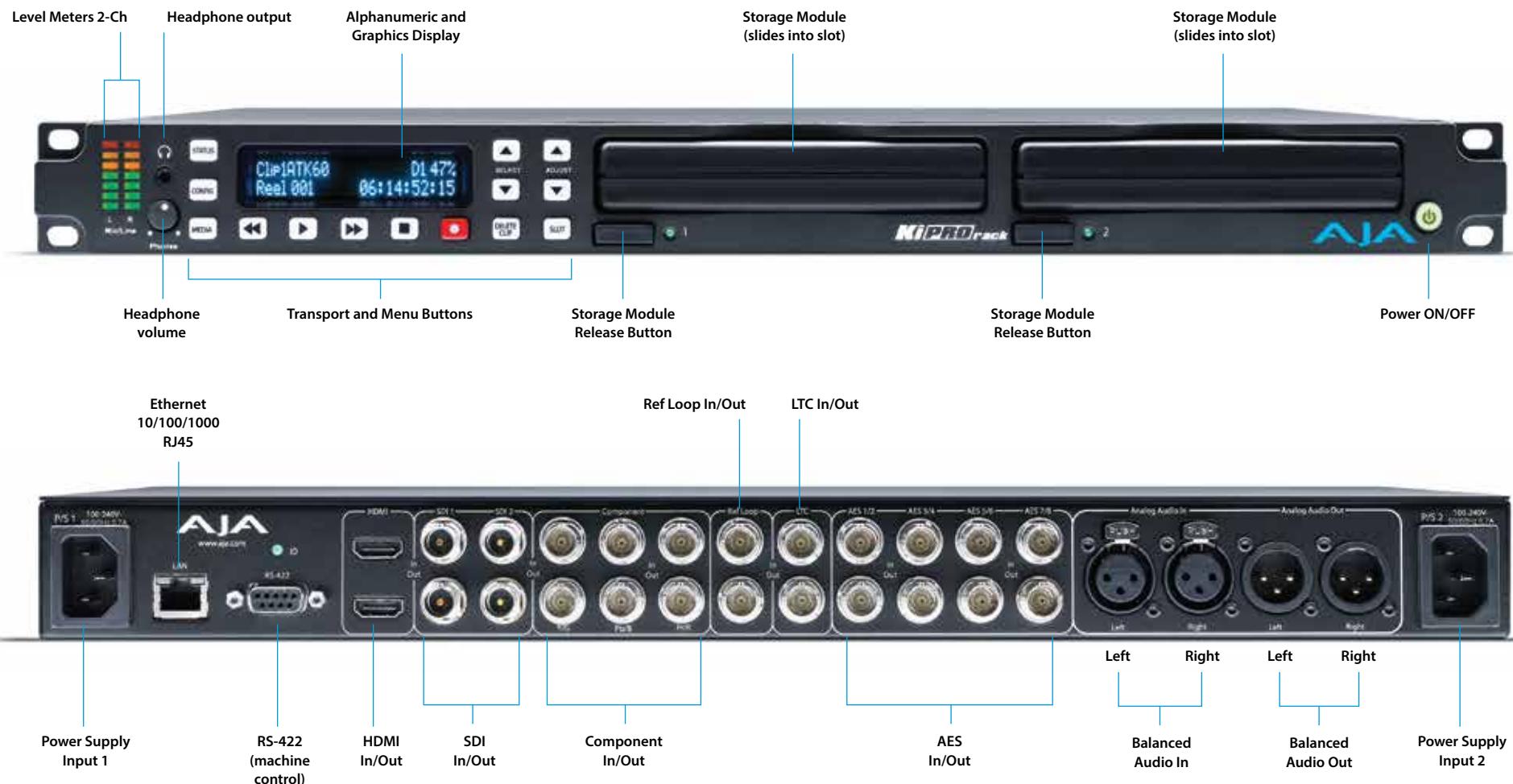
The video and audio connections on the rear panel of the Ki Pro Rack offer the same standard connectors found on traditional tape decks, allowing Ki Pro Rack to integrate easily with your current cabling and routing. The rear connections include SDI, HDMI, component analog, AES and analog XLR balanced audio, LTC, RS-422 and LAN.

## Integrated AJA hardware conversion

Ki Pro Rack has AJA's industry-leading conversion technology built in so you can perform high-quality up/down/cross conversion during recording or playback without having to use a second device.



## Connections



[Click here](#)

For full product specifications visit [www.aja.com/en/products/ki-pro-rack/#techspecs](http://www.aja.com/en/products/ki-pro-rack/#techspecs)



## WAVE Deploys AJA Ki Pro Racks to Simplify Online Video Broadcasts for Celebration Church

*"... We knew it would fit seamlessly into the workflow and also cut recording and ingest costs significantly."*

After each engagement, the church shares the recordings with religious institutions and online audiences around the world. Last year Celebration began planning for the construction of a new 2,700-seat worship sanctuary and seized the opportunity to upgrade its recording and broadcast workflow from SD to HD. To simplify the transition, the church enlisted the expertise of WAVE, a systems integrator and design firm located in Charlotte, NC.

From inception through to final delivery WAVE collaborated closely with Celebration to implement an audio visual lighting (AVL) design for the new sanctuary that included both an HD projection and broadcast system. The original blueprint called for Apple® ProRes recording devices capable of synchronizing timecode stamps across five different ISO feeds – for which AJA's Ki Pro Racks proved ideal. The devices' gang recording capabilities helped simplify the process, as the Ki Pro Racks could be linked together via LAN connectivity through an Ethernet switch. This allowed the Celebration team to assign one Ki Pro Rack as a master recording device that could control all others in the chain.

Paul Henderson, WAVE Design Principal shared, "We have worked with AJA gear on a number of occasions, and it has always been reliable; Ki Pro Rack was a natural choice for this environment and for Celebration's transition to HD. We knew it would fit seamlessly into the workflow and also cut recording and ingest costs significantly."

Celebration's sanctuary officially debuted in November 2012 and currently houses eight AJA Ki Pro Racks (located in an equipment room) and five Sony cameras (spread throughout the sanctuary), in addition to a Ross Vision Switcher, coolux Pandora's Box Media Server and more (based in a central control room).

Ron Dubois, Celebration Church's Video Engineer, now relies on the Ki Pro Racks to capture weekly footage of each event in Apple ProRes. At the completion each service or event, he removes the drive modules from the Ki Pros and transports the modules to an off-site office for editing in an Adobe® Premiere Pro® suite before sharing the final version with other churches or on Celebration Church's website.

"One of the biggest advantages of the Ki Pro Racks is that you can easily swap out drives as you would on a conventional server. I can pull out a drive, take it over to our office five miles away, hook it up to our edit suites and I'm ready to go," he says. "That alone saves us a ton of time and really helps boost productivity."

With the Ki Pro Racks in place, Dubois also has the flexibility to replay pre-recorded services and events directly off the recording devices. He notes, "If a pastor isn't available for a service, we can easily replay an earlier service that was recorded in the sanctuary right off the Ki Pro Racks – just like that."

Leveraging the integrated web-browser control on the Ki Pro Racks, Dubois is also able to store devices in a separate equipment room and control the master recording device remotely. "We love that we can start and stop the devices all at once without being in the same room. It saves us space in an often overcrowded control room," Dubois explains.

"The Ki Pro Racks are a great, economical way to make the transition to digital without having to invest in a huge, expensive server. No matter how much we push them, they continue to perform consistently – even if they're running all day long," he concludes.

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# Tech Specs

## Video Formats

- 525i 29.97
- 625i 25
- 720p 23.98\*, 25\*, 29.97\*, 50, 59.94, 60
  - \* Note: These formats require a valid camera source and the use of the Record Type>VFR selection
- 1080i 25, 29.97, 30
- 1080PsF 23.98, 24, 25\*, 29.97\*
- \* Note: These formats require a valid camera source and the use of the Record Type>PsF selection
- 1080p 23.98, 24, 25, 29.97

## Codec Support

- Apple ProRes 422
- Apple ProRes 422 (HQ)
- Apple ProRes 422 (LT)
- Apple ProRes 422 (Proxy)
- Avid DNxHD 36
- Avid DNxHD 145
- Avid DNxHD 220

*Note: Avid codecs are as indicated on Ki Pro Rack. Actual data rates will vary with frame rate.*

## Removable Storage

- AJA KiStor modules – 2 slots

## Video Input Digital

- SD/HD SDI, SMPTE-259/292/296, 10-bit
- Single Link 4:2:2 (2 x BNC, input selection in software)
- HDMI v1.3

## Video Input Analog

- SD/HD Component (3 x BNC)
- SMPTE/EBU N10, Betacam 525 line, Betacam 525J
- 12-bit A/D, 2x oversampling
- +/- .25 dB to 5.5 MHz Y Frequency Response
- +/- .25 dB to 2.5 MHz C Frequency Response
- .5% 2T pulse response
- <2 ns Y/C delay ineqity
- or
- Composite (1 x BNC – CVBS on Y)

## Video Output Digital

- SD/HD SDI, SMPTE-259/292/296, 10-bit
- Single Link 4:2:2 (2 x BNC)
- HDMI v1.3
- Note: HDMI requires 1080i, 720p or 1080p to be active; HDMI does not provide support for PsF

## Video Output Analog

- Component (3 x BNC)
- HD: YPbPr, RGB
- SD: YPbPr, RGB (component mode)
- SMPTE/EBU N10, Betacam 525 line, Betacam 525J, RGB
- 12-bit D/A, 8x oversampling
- +/- .2 dB to 5.5 MHz Y Frequency Response
- +/- .2 dB to 2.5 MHz C Frequency Response
- .5% 2T pulse response
- <1 ns Y/C delay ineqity
- or
- Composite (1 x BNC – CVBS on Y)
- NTSC, NTSCJ, PAL
- 12-bit D/A, 8x oversampling
- +/- .2 dB to 5.0 MHz Y Frequency Response
- +/- .2 dB to 1 MHz C Frequency Response
- .5% 2T pulse response
- <1% Diff Phase
- <1% Diff Gain

## Audio Input Digital

- 2-channel or 8-channel user selectable
- 8-channel, 24-bit SDI embedded audio, 48kHz sample rate, Synchronous
- 2-channel, 24-bit HDMI embedded audio, 48kHz sample rate, Synchronous
- 8-channel, 24-bit AES/EBU audio, 48kHz sample rate, Synchronous or Non-synchronous, Internal sample rate conversion (4 x BNC)

## Audio Input Analog

- 2-channel, 24-bit A/D analog audio, 48kHz sample rate, balanced (2 x XLR)
- +24 dBu Full Scale Digital
- +/- 0.2 dB 20Hz to 20kHz Frequency Response
- Note: Line or Mic selection via CONFIG menu parameters

## Audio Output Digital

- 8-channel, 24-bit SDI embedded audio, 48kHz sample rate, Synchronous
- 8-channel, 24-bit HDMI embedded audio, 48kHz sample rate, Synchronous
- 8-channel, 24-bit AES/EBU audio, Synchronous or Non-synchronous, Internal sample rate conversion (4 x BNC)

## Audio Output Analog

- 2-channel, 24-bit D/A analog audio, 48kHz sample rate, balanced (2 x XLR)
- +24 dBu Full Scale Digital
- +/- 0.2 dB 20Hz to 20kHz Frequency Response
- Stereo unbalanced headphone (1 x 3.5mm mini jack)

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# Tech Specs *(Continued)*

## Up Conversion

- Hardware 10-bit
- Anamorphic: full-screen
- Pillar box 4:3: results in a 4:3 image in the center of the screen with black sidebars
- Zoom 14:9: results in a 4:3 image zoomed slightly to fill a 14:9 image with black side bars
- Zoom Letterbox: results in image zoomed to fill full screen
- Zoom Wide: results in a combination of zoom and horizontal stretch to fill a 16:9 screen; this setting can introduce a small aspect ratio change

## Down Conversion

- Hardware 10-bit
- Anamorphic: full-screen
- Letterbox: image is reduced with black top and bottom bars added to the image area with the aspect ratio preserved
- Crop: image is cropped to fit new screen size

## Cross Conversion

- Hardware 10-bit
- 1080i to 720p
- 720p to 1080i

## Timecode

- SDI RP188/SMPTE 12M via SDI BNC
- HDMI (when used with compatible cameras)
- LTC input (1 x BNC)
- LTC output (1x BNC) (Note: active during playback not during record or EE)

## Reference Input

- Analog Color Black (1V) or Composite Sync (2 or 4V)
- Looping, non-terminating.

## Network Interface

- 10/100/1000 Ethernet (RJ-45)
- Embedded web server for remote control

## User Interface

- 2 x 20 character display, with dedicated buttons

## Physical

- Width: 19" (48.26cm)
- Depth: 12.5" (37.74cm) from front panel to back of deepest connector
- Height: 1.75" (4.45cm)
- Power: 100-240 VAC 50/60Hz (Dual, redundant power supplies), 40W typical; 10A Max

## Machine Control

- RS-422, Sony 9-pin protocol
- 9-pin D-connector pinout is as follows:

1	GND
2	RX-
3	TX+
4	GND
5	No Connection
6	GND
7	RX+
8	TX-
9	GND
Shell	GND

[Click here](#)

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### 3-year warranty

AJA Video warrants that Ki Pro products, except for Storage Modules and docks, will be free from defects in materials and workmanship for a period of three years from the date of purchase. Storage Modules and docks are warranted for one year.

### About AJA Video Systems, Inc.

Since 1993, AJA Video has been a leading manufacturer of video interface and conversion solutions, bringing high-quality, cost-effective digital video products to the professional, broadcast and post-production markets.

AJA products are designed and manufactured at our facilities in Grass Valley, California, and sold through an extensive sales channel of resellers and systems integrators around the world. For further information, please see our website at [www.aja.com](http://www.aja.com)

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